[0010] U.S. Patent Application Serial No. 09/854,937 entitled "High Temperature Super-Conducting Rotor Having A Vacuum Vessel And Electromagnetic Shield And Method For Assembly", filed May 15, 2001 (atty. dkt. 839-1016);

[0011] U.S. Patent Application Serial No. 09/854,944 entitled "A High Power Density Super-Conducting Electric Machine", filed May 15, 2001 (atty. dkt. 839-1019);

[0012] U.S. Patent Application Serial No. 09/854,943 entitled "Cryogenic Cooling System For Rotor Having A High Temperature Super-Conducting Field Winding", filed May 15, 2001 (atty. dkt. 839-1062);

[0013] U.S. Patent Application Serial No. 09/854,464 entitled "High Temperature Super-Conducting Racetrack Coil", filed May 15, 2001 (atty. dkt. 839-1063); and

[0014] U.S. Patent Application Serial No. 09/855,034 entitled "High Temperature Super Conducting Rotor Power Leads", filed May 15, 2001 (atty. dkt. 839-1064).

IN THE CLAIMS

Please substitute the following amended claims for corresponding claims previously presented. A copy of the amended claims showing current revisions is attached.

1. (Amended) In a synchronous machine, a rotor comprising:

a rotor core;

a super-conducting coil winding extending around at least a portion of the rotor core, said coil winding having a coil end section adjacent an end of said rotor core, and

end coil support attached to and bracing said end section and being thermally isolated from said rotor core, wherein the end coil support attaches along a side of said end section parallel to a rotor axis.

2. (Amended) In a rotor as in claim 1 wherein said end coil support is a split clamp.

3. (Amended) In a rotor as in claim 1 wherein the end coil support includes a pair of plates between which sandwiched the coil end section.

4. (Amended) In a rotor as in claim 1 further comprising a cryogenic coupling providing cooling fluid to said coil winding, wherein said end coil support is cooled by conduction from said coil winding.

5. (Amended) In a rotor as in claim 1 further comprising a rotor end shaft having a slot to receive said coil end section and end coil support, and said end shaft is thermally isolated from said end coil support.

6. (Amended) In a rotor as in claim 1 wherein said end coil support braces an entire length of said coil end section.

7. (Amended) In a rotor as in claim 1 wherein said end coil support is transverse to an axis of the rotor core.

8. (Amended) In a rotor as in claim 1 further comprising a second coil end section adjacent a second end of said rotor core, and a second coil support bracing the second end coil end section.

9. (Amended) In a rotor as in claim 1 further comprising side coil supports attached to a long side section of said coil.

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10. (Amended) In a rotor as in claim 9 wherein said side coil supports further comprises at least one tension rod extending transversely through said rotor core, and coil housings attached to opposite ends of the tension rod, wherein said coil housings each attached to an opposite long side section of the coil.

12. (Amended) A method for supporting a super-conducting coil winding on a rotor core of a synchronous machine comprising the steps of:

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a. bracing an end section of the coil winding with an end coil support attached to at least one side of the end section parallel to a rotor core axis;

b. assembling the coil winding, end coil support and rotor core;

c. attaching a rotor end shaft to said rotor core;

d. thermally isolating the end coil support from the rotor core and shaft.

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15. (Amended) A method as in claim 12 wherein the bracing step includes applying plates on opposite surfaces of the end section, wherein the opposite surfaces are parallel to the rotor coil axis.

17. (Amended) A rotor for a synchronous machine comprising:

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a rotor core having at least one rotor core end orthogonal to a longitudinal axis of the rotor;

at least one end shaft attached to said rotor core end;

a race-track super-conducting (SC) coil winding extending around said rotor core and having a coil end section adjacent said rotor end;

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a coil support brace attached to said coil end section and thermally isolated from said rotor core and rotor end shaft, wherein the coil support brace is affixed to a surface of the coil end section parallel to the axis of the rotor.

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21. (Amended) In a rotor as in claim 17 wherein said rotor end shaft has a slot to receive said coil end section and coil support, and said end shaft is thermally isolated from said coil support.